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ZIOLOKOWSKI PATENT SOLUTIONS GROUP, LLC (BMCA)			DOLINAR, ANDREW M	
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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 18

Application Number: 09/579,973
Filing Date: May 26, 2000
Appellant(s): NG, PAUL TAT-KEUNG

Timothy J. Ziolkowski
For Appellant

EXAMINER'S ANSWER

MAILED

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GROUP 3700

This is in response to the appeal brief filed August 20, 2003.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

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(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

The amendment after final rejection filed on May 19, 2003 with the appeal brief has been entered.

(5) *Summary of Invention*

The summary of invention contained in the brief is deficient because it fails to refer to the drawing by reference characters as required by 37 CFR 1.192(c)(5).

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

The rejection of claims 1, 7-14, 21-24 and 26-36 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

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(8) Claims Appealed

The copy of the appealed claims 1, 7-14, 21-24 and 26-36 contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,816,221	KRUEGER	10-1998
4,895,120	TOBINAGA et al	1-1990

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 7-14, 21-24 and 26-36 are rejected under 35 U.S.C. 103 as being unpatentable over Krueger in view of Tobinaga et al. This rejection is set forth in prior Office Action, Paper No. 12, on page 2.

(11) Response to Argument

Appellant has presented arguments with respect to motivation to combine the references, reasonable expectation of success, and the scope and content of the prior art grouped separately. Arguments regarding the scope and content of the prior art will be addressed first.

On pages 9 and 10 of the brief, appellant argues, based on the use of the term "reverse prevention control", that the ignition control system of Tobinaga et al does not cause the engine to begin firing before rotational direction is determined. This conclusion ignores teachings and inferences which one skilled in the art would reasonably be expected to draw from the reference

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and is not based on a technical analysis of the disclosure as a whole. The meaning of terms cannot be interpreted in a vacuum but in the context of the entire disclosure of the reference.

The preferred embodiment of the ignition control system of Tobinaga et al has a position sensor arrangement that generates a series of pulses, each of which is associated with a specific cylinder. The pulses generate ignition signals, which are operative to fire the spark plugs. See column 5, lines 56-67. The pulses are produced at fixed positions advanced from the top dead centers TDC of respective cylinders by starting ignition timing angles. See column 6, lines 37-61. The crank position is determined over an angular range of only 60° - 0° (i.e. less than a single rotation of 360°) in the six cylinder engine 11, since a new pulse is generated by the pulser coils 32 every 60° of the crankshaft rotation (column 7, lines 35-39). Since the pulses serve to fire the spark plugs it can be inferred that the first spark plug firing occurs within the first 60° of crankshaft rotation. There is no disclosure that position pulses are ever prevented from firing a spark plug without reverse rotation detection.

Tobinaga et al describes reverse prevention control at column 16, lines 27-40, as follows:

"During the operation of the engine step (44), the ignition timing means 30 makes a judgment as to whether the output pulses P_1 to P_6 from the pulser coils 32 corresponding to respective cylinders are in correct order, i.e. P_1 P_2 P_3 P_4 P_5 P_6 , in a step (45). If the answer to this judgment is NO, the ignition timing means 30 operates not to transmit the ignition timings for all cylinders to the ignition signal generating means 31 and effects a misfiring control of the CDI unit 38 in a step (46). If the result of judgment in the step (45) is YES, the ignition timing 30 confirms that the engine 11 is operating in the forward direction in a step (47) and the process to the step (45) to continue ordinary ignition timing control."

According to this disclosure, a complete rotation occurs before reverse rotation is determined. Therefore, it can be inferred that spark plug firing occurs before reverse rotation is determined. There is nothing to indicate that Tobinaga et al intended the term "reverse prevention control" to be limited to the meaning espoused by appellant.

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In considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences, which one skilled in the art would reasonably be expected to draw therefrom. See *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

The arguments on pages 7 and 8 of the brief regarding a reasonable expectation of success are without merit given that they rely on the same incomplete analysis of the reverse rotation preventing operation of the ignition control system of Tobinaga et al as discussed above.

On page 13 of the brief, appellant further argues that claim 21 distinguishes over the combination of Krueger and Tobinaga et al by virtue of the limitation "acts (1) and (2) are carried out during a single actuation of the manually powered starter, and acts (3) and (4) are carried out after the engine has been allowed to start". The phrase "during a single actuation" is functional and does not distinguish structurally over the references as applied in the rejection. Appellant has made no allegation that this function implies the presence of specific structure that is not taught or suggested by the prior art.

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997). A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Regarding appellant's comments on page 14 of the brief as to claims dependent on claim 21, Claims 22-24 and 26, depending from claim 21, differ in scope from claims 2-4 and 6

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in that claims 22-24 and 26 do not define a relationship between marker detection and determining absolute rotational position.

Regarding claim 34, on page 15 of the brief appellant further argues that Tobinaga et al does not teach the “means for enabling an engine firing sequence” is a conclusion unsupported by an explanation of how the claim is limited to specific features differing from the reference. It is noted that the corresponding structure of this element is an electronic controller, an element present in both Krueger and Tobinaga et al. The electronic controller in the ignition control system of Tobinaga et al is also disclosed as including a microcomputer substantially as disclosed by appellant, which performs the claimed function. There appear to be no structural features of this element as disclosed by appellant to distinguish it over the corresponding element of Tobinaga et al.

The additional arguments, on pages 15 and 16 of the brief, that the pulse generating means of Tobinaga et al is not equivalent to the “means for determining an absolute rotational position” of claim 34 serve only to establish that the elements are different, not that they are not equivalent. A structure lacking several components of the overall structure corresponding to the claimed function and also differing in the number and size of the parts may be insubstantially different from the disclosed structure. The limitation in a means-plus-function claim is the overall structure corresponding to the claimed function. The individual components of an overall structure that corresponds to the claimed function are not claim limitations. See *Caterpillar Inc. v. Deere & Co.*, 224 F.3d 1374, 56 USPQ2d 1305 (Fed. Cir. 2000). The pulse generating means of Tobinaga et al is equivalent to the “means for determining an absolute rotational position” of claim 34 in that both elements use a rotation sensor to generate a series of signals corresponding to specific engine cylinders.

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On pages 5-7 of the brief, appellant presents arguments urging that there is no motivation to combine features of Krueger and Tobinaga et al. Regarding arguments as to the advantages of appellant's invention, it is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. See *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972) and *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), cert. denied, 500 U.S. 904 (1991).

Krueger discloses an engine control system for a rope-start engine. An alternator is provided to supply the control system with sufficient power to start the engine without a battery. See column 2, lines 1-7. The control system includes an electronic control unit 36 that operates injectors 37 and ignition coils 39. Details of ignition control as well as the type of engine used are not included in the disclosure of Krueger, therefore one of ordinary skill would have to look to other prior art in order to design a complete engine. Tobinaga et al discloses ignition control details including disabling spark firing when reverse running is detected as discussed above. There is no reason that the use of the ignition control of Tobinaga et al would be limited to an engine with an electric starter.

The strongest rationale for combining references is a recognition, expressly or impliedly in the prior art or drawn from a convincing line of reasoning based on established scientific principles or legal precedent, that some advantage or expected beneficial result would have been produced by their combination. *In re Sernaker*, 702 F.2d 989, 994-95, 217 USPQ 1, 5-6 (Fed. Cir. 1983). An engine combining features of the alternator powered electronic control unit as taught by Krueger and ignition control as taught by Tobinaga et al would provide the advantage of a less bulky engine for a small vehicle that avoids the hazards of reverse engine running. Since Krueger already has the essential features for efficient starting of a manual-start engine and the feature of Tobinaga et al relevant to the claimed subject matter is disabling


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spark firing when reverse running is detected, the argument that one of ordinary skill would not consider Tobinaga et al when looking to improve starting efficiency is not germane to the issues of the rejection.

Appellant's speculation as to how one of ordinary skill would combine the teachings of Krueger and Tobinaga et al do not constitute evidence. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965).


For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


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AMD
November 3, 2003

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